

September 9, 2002
Demonstration
Investigation of the Health and Safety Aspects

Submitted to Michael Di Grappa, Vice Rector, Services

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1. Purpose of the Investigation

An investigation is carried out following a serious injury or major incident that could have resulted in such. The post event investigation is a critical aspect of Concordia University's prevention programme and a fundamental component of its health and safety management system. The intent is to identify direct and underlying causes leading up to the incident and to evaluate its impact in order to enable us to learn from the experience and take steps to prevent a recurrence.

The purpose of this investigation is to examine the health and safety elements. It does not address the specific security aspects of the event but will touch upon risk assessment and event and emergency management as they relate to the health and safety of the University community.

A number of students, staff and faculty, as well as several of the associations which represent them, claim that the planning and management of the event unnecessarily put at risk the health and safety of members of the University community. There have also been some concerns expressed about toxic exposures, allegations of police aggression and assault, intimidation and unacceptable behaviour by protesters.

2. Sources of Information

Information for this report has been derived from the following sources: first hand observation of the event, viewing of videotapes, examination of Security logs for sequencing of events, interviews with a number of key individuals and a review of incident reports submitted to the Environmental Health and Safety Office.

3. Summary of the Event –What Happened

A demonstration to protest a scheduled speech by Benjamin Netanyahu, former prime minister of Israel, became violent when a group of demonstrators broke through a security perimeter inside the Hall Building and another group of demonstrators smashed windows. These events culminated in the throwing of sticks, bricks and stones through the broken window by those outside and in the throwing of furniture and objects by those inside who had occupied the Mezzanine and the escalators and were attempting to take over the Lobby to prevent the speech from taking place. Riot police responded with pepper spray directed towards the window-smashing demonstrators outside on De Maisonneuve and broke up the violent group of demonstrators inside the Henry F. Hall Building.

The University cancelled the speech and closed the building when the safety of the participants, building occupants and the speaker could no longer be assured. The more than 1000 demonstrators were made up of both Concordia students and non-students.

While the disruption to the University was considerable including closure of the Hall Building and the cancellation of classes in that building, only a few minor injuries were reported. Material damage was minimal.

Mr. Netanyahu had been invited to Concordia by the Hillel student group. He had been scheduled to speak at noon on September 9 in room H-110, the auditorium of the Hall Building.

More details describing the sequence of the events can be found in Appendix A.

4. Risk Assessment

At the end of July, the University administration first became aware that the Hillel student group had invited Benjamin Netanyahu to speak at Concordia in early September.

Concordia Security carried out the first risk assessment in early August, with the assistance of the Montreal Police Force (SPVM) and the RCMP. According to Concordia's Director of Security, neither the SPVM nor the RCMP had previously been aware that a visit to Montreal by the former Prime Minister of Israel was being considered.

The security risk evaluation considered the following:

1. *Type of event and subject matter* –potentially controversial speaker addressing the violence in the Middle East;
2. *Attendance expected* – capacity crowd of pro and anti-Israeli supporters in the room, with pro-Palestinian student activists demonstrating against the speech outside;
3. *Serving of alcohol* - on MacKay street and on the Terrace behind the Hall Building (CSU's intention to obtain an alcohol permit);
4. *Location of the event and the capacity of the place of assembly* – H-110 in the Hall Building with a seating capacity of 675 has limited escape routes in case an emergency evacuation is required. The Hall Building symbolizes "Ground Zero" for polarized pro-Palestinian and pro-Israeli student activists;
5. *Will VIP's be invited* --Benjamin Netanyahu, a former prime minister of Israel, is a prominent public figure. Important leaders of the Jewish Community sponsored his visit and some would be in attendance. Some pro-Palestinian student activists consider Netanyahu to be a war criminal;
6. *Media coverage of the event*--expected to be extensive;
7. *Type of publicity* – expected to be polarized;
8. *History of violence for the type of event or with people involved* – a speech on a similar topic held in January 2001 in the same location came close to being

violent. A speech by Mr. Netanyahu sponsored by University of California at Berkley last year was cancelled because of a violent protest.

Additional considerations:

- The event was being planned during student orientation in close proximity to other events where large crowds of students and visitors were expected to be present.
- It was anticipated that MacKay St would be closed from Sherbrooke to De Maisonneuve during student orientation.
- The event was scheduled to be held (2) two days prior to the first anniversary of the attack on the World Trade Center.

On the basis of this risk assessment, the Director of Security initially advised the Administration to consider an alternative location for the event, either on the Loyola Campus or off-site entirely. A number of other locations were proposed to the event organizers, none of which appeared to be acceptable to them.

In mid-August, the Director of Security was asked to do a second risk assessment taking into consideration additional information which had been obtained: police intelligence could provide no information that there might be external elements participating in the protest, the CSU had not obtained a permit to close MacKay Street, the CSU and other student groups had assured the Administration that the demonstration would remain peaceful. The fact that the University had subsequently learned that there had been 16 peaceful demonstrations on the Middle East situation in Montreal over the past 12 months was also a factor in the decision to reconsider the initial position.

The second risk assessment presented at the end of August by the Director of Security contained several options.

As a result of the second assessment, an elaborate security plan was developed, in consultation with SPVM and RCMP, which would allow for the holding of the event in the Hall Building without cancelling classes. This plan depended upon the collaboration of police forces, heavy police and security presence on campus and the use of approximately 80 contract security agents.

Very few individuals from the University were included in the risk assessment.

5. Event Planning

Early event planning was carried out with considerable discretion and by a limited number of individuals and departments under the leadership of the Director of Security. Ten days prior to the event, Facilities Operations and Environmental Health and Safety were asked for assistance. IITS and the Communications Unit were also involved at this point.

On September 5, Internal Relations informed the Concordia community that the event was to be held on September 9th in the Hall Building and that normal activities would be maintained except in specified areas of the building.

The Environmental Health and Safety Office alerted volunteer responders to review their evacuation procedures in the unlikely event that the downtown building would need to be evacuated. Laboratory security was tightened. A hazardous materials safety alert was issued and laboratory supervisors and researchers were asked to increase vigilance and to review emergency procedures with their personnel. Crisis intervention counsellors were contacted, briefed and kept on standby.

Health Services contacted the Montreal General Hospital and Urgences Santé to alert them.

Security established an Operations Control Centre in the Hall Building to which key members of the Emergency Management Team were asked to assemble on the morning of September 9th in order to facilitate the flow of information and decision-making. The line of command was established. Surveillance cameras focused on critical areas in and around the building and audio communications to H-110 also were installed.

Facilities Operations established a command post in the MI building on Bishop St. Staff were provided with two-way communication devices and asked to stand by.

There was a considerable amount of advance media coverage and wide publicity of the event through student groups.

The week before the event, the Dean of Students and Director of Security met on several occasions with a number of student groups: CSU, the event organizers and the SPHR and other known pro-Palestinian activists and received assurances that the demonstration would be non-violent and that they would cooperate with Security.

From September 3rd – 5th, the Rector's Cabinet was away on a planning retreat.

On Friday, September 6th the Vice Rector, Services called the Emergency Management Team together for a briefing. At this point, three days before the event was to be held, there was little opportunity for EMT members to recommend modifications to the plan.

At least two unions advised their members that they could stay away from work the day of the event if they feared for their safety but that they needed to contact their supervisor and the union office. A union officer also contacted the CSST to inquire about employee rights, following which an inspector contacted the Director of EH&S to enquire if she was aware of the event and asked for information about event planning.

6. Operations on September 9

Science laboratories in the Hall Building and those in the sub-basement were cancelled. A few classes were also cancelled when professors stayed away. A number of employees opted not to come to work including a number of emergency responders and fire marshals. The basement, sub-basement, garage, Lobby and Mezzanine of the Hall Building were closed, as was the tunnel to the McConnell Building. Otherwise, all buildings were open. Employee and students were asked to enter the Hall building through MacKay St. Ticket holders were instructed to enter through Bishop St. The main doors to the Lobby on De Maisonneuve were locked.

Early on the morning of September 9th, 79 contract security guards met with Concordia Security personnel to be briefed. They were then organized into teams and positioned throughout the building under the supervision of Concordia Security supervisors.

Approximately 80 SPVM officers were assigned to the Operation, some in riot gear. The plan was to have Concordia Security secure the interior of the building with the SPVM outside controlling the crowd and securing the perimeter. Eighteen (18) RCMP officers were also present to protect the speaker and conduct special operations. A metal detection device was installed at the entrance used by the visitors and an explosives dog was used to patrol the Lobby and H-110. All people entering to attend the speech were screened. The shuttle bus was rerouted.

The temporary Operations Control Centre with members of the EMT required to assist with the operation, and the Facilities Operations command post, were operational from 10:30 on.

A Concordia staff nurse was stationed in the Security office and four (4) ambulances were posted on De Maisonneuve throughout the event.

The area delineated by Bishop, MacKay and De Maisonneuve Streets was closed to vehicle traffic up to Sherbrooke St. but pedestrian traffic was permitted.

By 10:45, large numbers of vocal demonstrators had assembled outside the Hall Building and in the surrounding streets. Incidents of pushing and shoving, taunting and spitting were reported by some individuals who were attempting to enter the Hall Building to attend the speech.

At approximately 11:30 a.m., a group of approximately 150 individuals broke through the barricades set up inside the Hall Building, rushed across the Mezzanine and down the escalators towards the main lobby of the Hall Building. The individuals were initially stopped on the escalators by a police dog and were then blocked by members of the SPVM. This situation lasted for approximately ninety minutes. During this period, the individuals on the escalator and Mezzanine were shouting, banging and taunting the police and those who were walking through the Lobby to attend the scheduled speech.

It became apparent that Concordia Security needed police reinforcement in the Hall Building on the Mezzanine and in the Lobby to control the demonstrators, and outside on De Maisonneuve to secure the ground floor windows. While there had been 6-8 members of the riot squad in the Lobby of the Hall Building as of 9:00 am as well as a number of police outside, sufficient reinforcements to contain the escalating situation did not arrive until violence broke out at approximately 13:00.

At approximately 13:00 violence broke out; individuals outside the Hall Building broke a window and threw sticks, stones and bricks through the broken window, the individuals on the Mezzanine and escalators began throwing furniture and objects over the Mezzanine at the police and other occupants in the Lobby below.

Riot police responded with pepper spray directed towards the window smashing demonstrators outside on De Maisonneuve and broke up the violent group of demonstrators inside the Hall Building on the Mezzanine and escalators.

Following this action, the building was ordered closed. The emergency evacuation system was not activated and the general alarm (ringing of bells) was not pulled, as this would have opened all of the emergency exits releasing building occupants into the path of violent demonstrators and allowing more demonstrators inside. Not having called a general alarm gave a mixed message to occupants who, even on upper floors, could hear the noise below and felt something in the air.

Both the public address announcement and contract security guards told occupants to exit by MacKay St. but once on the Mezzanine level, occupants found exit doors locked, riot police present and heavy dust in the air. Some were then told to go back up into the building; others were able to get out through Reggie's Pub. Police officers, attempting to clear the Mezzanine of the demonstrators could not distinguish between them and other occupants trying to exit. There was considerable confusion for several minutes with police and Concordia Security giving conflicting information. The few emergency monitors who were present got insufficient information to carry out their responsibilities effectively. Contract guards on the floors were unfamiliar with the building and could not guide occupants to alternate exits.

Facilities Operations had plywood on hand and personnel were able to move in quickly to make temporary repairs when the windows were broken. They were also able to respond immediately to shut off the ventilation and convert to 100% fresh air and exhaust when pepper spray was drawn into the building and demonstrators emptied fire extinguishers onto the Mezzanine.

The Operations Control Centre in the Hall Building was evacuated at 13:14 because the pepper spray and the interior of the building made it impossible to stay without respiratory protection.

Once the crowd had dispersed and Security declared the situation safe, maintenance and custodial personnel moved in to do repairs and cleanup so that the building could re-open

for classes the next morning. For more details on the sequence of events, refer to Appendix A.

The Rector assembled his Cabinet and the Emergency Management Team at 16:00 to assess the damage and to develop a recovery plan.

Staff and students were notified that counselling services were available to them either through the Employee Assistance Provider or the internal university services: Campus Ministry, Health Services and Counselling and Development.

The Emergency Management Team met on September 11 to evaluate the emergency management of the event and to recommend improvements to the planning process. The report of this meeting is appended as Appendix B.

7. Injuries and Property Damage

There were no serious injuries and minimal property damage (broken windows, display cases, fire hose cabinet and broken furniture).

Pepper spray used by police, and the evacuated contents of a dry fire extinguisher used by a demonstrator, were drawn into the ventilation systems and circulated throughout the building from the Lobby to the 12th floor. Dust was particularly heavy from the Lobby to the 4th floor causing burning, tearing eyes, choking, and coughing and short-term breathing difficulties.

Following the event, extensive cleaning of the Hall Building Lobby, Mezzanine, 3rd and 4th floors was required to remove broken glass, furniture, debris and the residue left by pepper spray and dry chemical fire extinguishing material.

There were numerous expressions of fear and outrage but surprisingly few individuals bothered to report their experiences. Unions wrote on behalf of their members, complaining that they had been subjected to a dangerous situation when they had been told that the normal activities of the University would be maintained and that their safety could be assured.

As of December 2, the Environmental Health and Safety Office had received 12 unsolicited reports related to the incident:

1. Several individuals reported that they were pushed and jostled and jeered by the demonstrators;
2. Some experienced short-term respiratory problems, coughing, burning throat and eyes. One reported an eye injury which was treated in the Montreal General Hospital Emergency Department;
3. Others reported difficulty exiting the building because some of the exit routes were blocked;

4. Some occupants reported feeling panicked when they noticed something in the air and felt themselves to be trapped inside the building; others expressed fear and outrage;
5. One faculty member described trying to exit through MacKay with (3) three students, and finding the door locked, shouted at police to let him out and then being pepper sprayed by a police officer in a second floor stairwell. Police have assured us that pepper spray was only used on the crowd breaking the Lobby window.

Other reports reviewed:

A 59-year old gentleman ticket-holder was escorted from the building by the nurse on site and taken to hospital by Urgences Santé where he was admitted for treatment of a personal condition;

There was an unsubstantiated report that a Security agent had been injured but *this proved to be false*;

A demonstrator alleged that he had been injured by police *but did not file a report with the University so this cannot be investigated*;

Riot police in full gear suffered from heat and exhaustion. It was sunny and 33 degrees Celsius. The nurse on site administered first-aid to several officers;

Allegations of threats, harassment and intimidation involving people outside the building announced in the context of a communiqué issued by the University on October 31, 2002 were not reported to the EH&S Office and consequently have not been investigated;

Thirteen (13) fire alarms signals were received at the Security desk, all of which were false but which needed to be investigated;

8. Hazards

8.1 Pepper Spray

Police report that they only used pepper spray in the Lobby to prevent demonstrators from doing more damage and from entering the building through the broken window and that no tear gas was used at any time. There is no evidence to suggest that this was not the case. Normally pepper spray is used by police for open-air crowd control. In this case, it was directed at the crowd outside from within the building once the window facing De Maisonneuve was broken. The pressure differential between the inside and outside of the building forced some of it back into the building, and the chimney effect allowed it to be pulled through openings (e.g. escalator and elevator shafts) to the upper floors.

Pepper spray contains *Capsicum Oleoresin*, the active ingredient in chillies and peppers and two other undisclosed ingredients as well as de-natured alcohol and water. Although its acute effects are the irritation of the skin, eyes and respiratory tract, it is not known to have any long-term effects on humans.

The material safety data sheets (MSDS) obtained from the supplier contains minimal hazard information, but the Montreal Poison Control Centre assured us that there would be no long-term effects resulting from exposure. The MSDS is attached as Appendix C.

8.2 ABC Dry Chemical Fire Extinguisher

A 20 lb dry chemical extinguisher was emptied by a demonstrator on the Mezzanine in an act of vandalism. The dust released was also drawn into the ventilation systems and up through building openings causing short-term effects in a number of individuals. Its active ingredients are *Mono Ammonium Phosphate and Ammonium Sulphate*. The product poses low acute health risk and is not known to cause any chronic illness or disease. Overexposure can cause mild skin irritation, moderate eye irritation, gastric distress and mild irritation of the nose, throat and other tissues of the respiratory tract.

There is no chemical reaction between this product and pepper spray or known synergistic health effects. The MSDS is attached as Appendix D.

8.3 Glass Windows

The shattered glass from the smashing of the windows flew into the building, landing as far as 35 feet from the window itself. Once broken, the large glass windows were very unstable and extremely dangerous. The large sheets under the force of their weight produced a guillotine effect, creating an extreme hazard, both to the demonstrators attempting to enter through the breach in the glass, and to the police and personnel inside.

8.4 Heat Stress

The temperature was 33 degrees Celsius. Police in heavy riot gear seemed to be the most affected.

8.5 Crowd

The large crowd (estimated to be well over 1000 at its peak) was observed to include some violent demonstrators. There was also some pushing, shoving and jeering of the ticket holders and between groups of demonstrators.

8.6 Police Aggression

We could find no evidence to support this allegation, however, one faculty member reports that he was pepper sprayed by a riot police officer as he was attempting to exit the building.

8.9 Projectiles

Sticks, stones, bricks and furniture were thrown by demonstrators at police. Demonstrators on the escalator and the Mezzanine were observed throwing small objects at the ticket-holders entering H-110 through the Lobby.

9. Conclusions

In terms of reported injuries and material damage, the effects were minimal. Other costs such as negative publicity and university reputation, cancelled classes¹, staff reinforcements and overtime, the effects on staff morale, employee relations and legal costs, some of which are more difficult to measure, are beyond the scope of this report. They should, however, also be taken into consideration when assessing damages. This will be an important factor in future risk assessments of similar situations.

It would appear that Concordia, the SPVM and RCMP underestimated the risk of violence. The demonstrators were not only Concordia students but also included a number of outside activists who seem to have been experienced and well-organized.

The risk assessment appears to have been limited to the security aspects of the event management, and consequently the decision-making by the Administration seems to have minimized the potential impact upon other aspects of the University and its operations. However, no one expected the level of formal organization by the protesters and the subsequent violence that occurred.

The cooperation between Concordia Security, the SPVM and RCMP, appears to have been good in the planning phase although their intelligence was unable to provide sufficient warning of the degree of external activist involvement in the demonstration and the potential for violence.

The internal coordination of Concordia services under the direction of the Vice Rector, Services and the Director of Security was excellent throughout. Despite the very short lead-time, the level of cooperation and degree of commitment demonstrated by the departments and individuals involved in both the planning and operations exceeded expectations.

The pro-active management of the media was exemplary but our internal communications were inadequate especially in advance of the event. Members of the university community should have been provided with sufficient information to be able to make informed decisions about their unit operations and personal conduct. Our present communication plan and the technology to support it is still inadequate.

¹ According to the Office of the Registrar at least 211 activities (classes, seminars and meetings) scheduled to be held in the Hall Building from 13:30 to 23:00 on September 9 were cancelled.

The Emergency Management Team was of limited use in the planning process because the Rector's Cabinet was away from the University on a planning retreat until the Friday before the Monday event was scheduled and hence was only briefed. Involving the EMT earlier in the planning may have raised questions that could have been useful in the risk assessment. While the Hall Building is the symbolic centre of the downtown campus and perhaps the entire University, it is almost impossible to secure unless it is completely closed. It contains research, educational and administrative operations which are critical to the University, and a wide array and impressive quantity of hazardous materials and activities that must be secured.

The provisions of the emergency evacuation plan were not used effectively. Contract guards did not have sufficient training or information about the building layout and emergency procedures to be of much use in getting people out of the building. Those emergency responders and fire monitors who happened to be present had no way of knowing what to do or from whom they should be taking instructions, since the normal evacuation procedures and routes of exit were not employed.

The investigation of the incident of September 9th and its impact on the University has provided us with the opportunity to question a number of assumptions, review certain practices and analyse our emergency plan. To this end, the following recommendations are offered for your consideration.

10. Recommendations

1. Revise the process assessing risk, in particular those risks associated with large public assemblies and student sponsored events, to ensure that the wider aspects (beyond security) and the possible impact on the University and its personnel are taken into consideration.
2. Review and upgrade the University's emergency plan and the planning process paying particular attention to:
 - training of security department-especially contract agents;
 - training and organization of volunteer emergency responders and fire monitors;
 - the emergency communication plan;
 - enhancement of emergency communication technology;
 - development and maintenance of departmental plans;
 - information and training for managers and supervisors;
 - most effective use of the EMT.
3. Do not continue to use the Hall Building for high-risk events until such time as key laboratory and research activities and the bulk of the hazardous materials are relocated, or, unless the building is closed.

4. Ensure that the permanent Operations Control Centre planned by the Director of Security is fully equipped as soon as possible and that alternate locations are clearly designated and equipped for back-up.
5. Integrate the University's emergency plan with those of the province and the municipality.
6. Ensure that Montreal emergency services have sufficient and accurate information about University facilities, activities, critical operations and vulnerabilities to enable them to provide us with the support services we require.
7. Review security procedures for laboratories and hazardous materials storage areas, engaging the researchers and academic administrators in the process.
8. Investigate the feasibility of reinforcing the large plate glass windows of the Hall Building Lobby to prevent the creation of a guillotine effect if they are broken.
9. Install a public address system on the exterior of the Hall and McConnell Buildings to assist with communication and crowd control.

APPENDIX A
Detailed Sequence of Events

Detailed Sequence of Events

From early on in the morning on the day of the event, September 9, 2002 the Hall Building was closed from the sub-basement to the 4th floor but was otherwise open for classes. Security inside the building was heavy.

At approximately 9:42 a.m. demonstrators started to gather on Bishop St., the designated entrance for ticket-holding attendees. Police and crowd-control barricades were positioned outside the entrance to provide a safe access for ticket-holders; however, there was some pushing, shouting and flag-waving by the demonstrators making it difficult for attendees to enter the building. Once inside, ticket-holders were required to enter the building through tight security surveillance.

Some demonstrators entered the Hall Building through unsecured doors on MacKay St and the rear terrace. They assembled on the Mezzanine. At about 11:30 a.m. approximately 150 demonstrators moved en masse, overwhelming security guards positioned there, broke through temporary barriers and gathered on the escalators and the Mezzanine overlooking the Lobby where they waved flags, shouted, banged and taunted the police and those who were walking by in the Lobby to attend the scheduled speech. Initially, three RCMP officers, one policeman, Director of Security and two Security Managers kept them from descending onto the Lobby, one with a police dog, until the SPVM in riot gear arrived in the Lobby to take charge of the operation several minutes later.

Between 11:30 and 12:00, a group of approximately 75 demonstrators assembled at the entrance of the McConnell Building garage blocking a possible route of entry for the speaker while another group assembled on Bishop St. blocking access to the Hall Building garage.

At 12:27, the Vice Rector, Services cancelled afternoon and evening classes as the situation was becoming alarming.

A third group of approximately 75 demonstrators assembled at the entrance to the McConnell Building Garage, blocking a possible route of entry for the speaker.

At 13:06, violence broke out both within the building and outside almost simultaneously. Demonstrators on De Maisonneuve kicked a hole in plate-glass windows on the ground floor Lobby and then threw stones, bricks, and sticks through the opening at riot police inside. Other demonstrators on the escalator and Mezzanine threw furniture and objects at the police below. They also used a crowd control barrier to smash the large Security Office window on MacKay St. There were more than 500 noisy demonstrators in De Maisonneuve at this time.

At 13:10, the Vice Rector, Services in consultation with his advisors, the Rector and police made the decision to cancel the event on the basis that the safety of the building occupants, participants and the speaker could not be assured.

At 13:15, two windows of the Security Office facing McKay St. were broken by the demonstrators.

At 13:20, the police, caught between two groups of violent demonstrators, attempted to protect themselves and to regain control of the situation. Inside the building, riot police charged up the escalator and through the Mezzanine forcing demonstrators up into the building. Other riot police in the Lobby used pepper spray on the violent demonstrators outside who were smashing the plate glass windows, hurling stones, bricks and sticks into the building and attempting to enter through the opening. On the Mezzanine, one of the demonstrators emptied an ABC dry chemical fire extinguisher which he aimed at police officers coming up the escalator and onto the Mezzanine to disperse the demonstrators.

The building is maintained under negative pressure in order to assure ventilation integrity. Consequently, the pepper spray directed onto the demonstrators outside on MacKay St. and the contents of the fire extinguisher used by demonstrators on the Mezzanine were immediately pulled up and into the building where they were quickly dispersed. Building occupants as far up as the 12th floor noticed their effects. It took Facilities Operations personnel between 4 to 5 minutes to manually close the ventilation systems and switch them to 100% fresh air entry and exhaust and several minutes more for the air to clear.

At 13:18, the Vice Rector, Services ordered the building closed. There was no general evacuation notice through the ringing of fire bells, but an announcement was made by Concordia Security on the public address system that occupants were to leave the building by exits leading onto MacKay St. Contract security guards posted on each floor tried to assist occupants to evacuate, but many of them, unfamiliar with the building and alternative exit routes added to the confusion by giving conflicting information. Many of the volunteer fire monitors and emergency responders who are counted upon to provide assistance during building evacuations were absent that day, having been advised by their unions that they could choose not to come to work if they feared that their safety could not be assured.

The Bishop St. exits were kept closed because the demonstration outside prevented safe exit through them. For a short period of time even the MacKay St. exits were closed, having been ordered locked by the police to prevent the violent demonstrators from entering the building. During this time, police escorted occupants from the Mezzanine down the escalator and out of the building. Other occupants were marshalled by University personnel to exit through Reggie's Pub and the Java U. By this time, there was considerable confusion and alarm. The air of Lobby and Mezzanine was filled with suspended dust particles causing difficulty for both building occupants and emergency personnel. Only some of the police officers wore respirators.

Individuals inside H-110 who had assembled to hear Mr. Netanyahu's speech were largely unaware of the violence that had erupted elsewhere in the building and outside, but event organizers had informed them that the speech had been delayed by the

demonstration. Although the speech was cancelled at 13:10, the first announcement was not made to the participants in H-110 until 13:24. The message was repeated at 13:32. Some occupants had become aware of “something in the air” and had attempted to leave. Police detained them inside the lecture hall until it was safe to exit. A few resisted police efforts to protect them. All were eventually escorted in small groups through the tunnel and out through the McConnell Building.

Outside the building, the crowd of demonstrators moved from Bishop St. to De Maisonneuve at approximately 14:01 where the demonstration continued for several minutes with supporters of the speech and demonstrators against it shouting and jeering and pushing at one another. Riot police moved in separating the two groups to prevent further clashes. By 14:10, H-110 was nearly empty. The crowd outside was finally dispersed at 15:30. At 16:10, Security declared the situation to be normal and at 16:30 the clean-up began.

APPENDIX B
EMT Debriefing of Events of September 9, 2002

Emergency Management Team
Debriefing of Events of September 9, 2002
 Sept 11, 2002, 2pm
 GM 100-24

Present: L. Zack, E. Abitol, D. Murphy (Communications), J. Brisbois, D. Dumoullin, J. Lachance (Security), A. McCausland (IITS), R. Young, P. Bolla, (Facilities Management), G. Bourgeois (HR/ER), D. Hastings (VRJR), A. Wilson-Wright (Provost), B. Freedman (Legal Counsel), S. Magor (EH&S), A. Nofall (VRS)

A visit of Benjamin Netanyahu, Ex Prime Minister of Israel on September 9, 2002 was cancelled at the last minute when a student demonstration became violent. The University cancelled the event when the demonstration accelerated into a riot involving police and demonstrators both inside and outside the building. At that point, neither the security of the speaker nor the building and its occupants could be assured.

The purpose of the debriefing was to conduct a critical evaluation of the planning and the management of the event, to identify successes, failures and lessons learned and ultimately to improve to the Emergency Management Plan and the planning process. It also served to bring EMT members up to date on recent developments.

1. Recap of Current Situation

- 5 students were arrested during the riot on September 9; another on September 10, following an altercation between students;
- A temporary moratorium on public debate on the Middle East situation is in place;
- Normal activities have resumed throughout the University;
- Security was increased yesterday but normal measures are in place today All building repairs will be completed by Saturday 14th;
- Press coverage of the event continues to be extensive and is generally critical;
- Tensions continue to be high in the student population and between the student government and the Administration;
- Staff and faculty are also affected; some express outrage either they the event was allowed to take place or that it was cancelled and free speech was denied, others that their work has been disrupted. Many staff working in the Hall building and surrounding annexes have expressed their fear that they have been exposed to toxic agents and placed at risk and that the University cannot assure their safety. The unions are also involved. The CSST has been called;
- Security is reviewing video-tapes of the event with the Dean of Students and the Police;
- Security will have a de-briefing meeting with the MUC Police and the RCMP tomorrow;
- The Executive Committee of the Board of Governors will meet on Friday September 13 to discuss its position.

2. What Went Well

Planning

Once it was decided to hold the event and that the building would remain open, the various Service Units worked cooperatively to plan the operation under the leadership of the Director of Security;

The Security Department engaged the MUC and RCMP in a risk assessment and planned their security operations in conjunction with them;

The establishment of an Operations Centre with security monitors as point of assembly for key decision-makers;

Advance briefing of key partners by the Director of Security;

Security site control system with colour coded passes for University personnel and press;

Facilities Management organization and control centre in the MI Building;

Medical emergency and crisis management services were on standby;

The pre-event briefing of the extended EMT by the VRS, although too close to the event to aid the planning, was extremely useful to have the EMT working from the same page with the same information.

What Went Well During the Operation

The Control room managed by Security assembled key players in one location with the surveillance cameras and ongoing communications from the front line to provide a direct oversight of the events as they developed;

The Security measures adopted were appropriate; the dog helped;

The leadership demonstrated by the VRS and the Director of Security; leadership was recognized. The line of command was respected;

The rapid response of Facilities Operations personnel when their services were required;

The “just in time” decision by the VRS to cancel the event; the right decision at the right time;

As riots go, this was mild; minimal damage to the building, no serious injuries and only 5 arrests.

What went Well in the Immediate Aftermath

Establishment of a back-up Operation Centre in the GM Building as a point of assembly when the Hall building was evacuated;

Debriefing meeting with the Rector's Cabinet and EMT immediately following the event to take stock and plan the next steps;

Proactive media management

3. Problems; Aspects Needing Improvement

Planning

Recommendations arising from the Security risk assessment with the evaluation of the potential for violence may have been underestimated;

Risk assessment and decision-making was focused on protection of the speaker and avoidance of violence but did not include wider impact on the Concordia community and its operations and the effect on its students and staff. In hindsight, the decision to keep the Hall building open and carry on business as usual was impractical;

The understanding between Concordia and the MUC police about having police in the building was unclear;

Contract guards would have been more useful if they had received more information about building emergency systems and evacuation procedures;

Communication to the University community regarding the event and its possible impact could have been more open and timely;

Managers and supervisors did not know what to advise their staff. It would have been helpful for supervisors to have a Q&A tip sheet to help them respond to employees' questions and concerns;

The Operations Centre needed an internet connection, second exit and a back-up location;

Problems Encountered During the Operation

Communication between police officers and Concordia Security could have been better;

The Mezzanine was not adequately secured; contract security guards were unprepared to deal with the situation; police were not present to back them up;

We were not prepared for the use of pepper spray inside the building but responded promptly with ventilation adjustments when it was;

Communications to building occupants and to the crowd outside regarding the cancellation of classes the building closure and the cancellation of the event could have been better;

The electromagnetic locking system on the Bishop St doors linked to the fire alarm system was disabled for security purposes. Despite the PA announcement to use McKay exit the doors should have been released unless guards were present to manually operate all exit. Some building occupants could not get out through emergency exits and panicked;

It was not clear in advance who was to make the announcement that the event was cancelled, hence, the announcement was unnecessarily delayed.

4. Lessons Learned

The University underestimated the risk of violence;

The Hall Building is almost impossible to secure unless it is closed completely;

Working in close collaboration with the police and public security agencies in planning and carrying out operations is helpful;

Proactive communications with both the internal and external community is important;

Our emergency communication system needs to be upgraded;

We need a fully equipped operations centre and back-up location in case the primary one becomes unusable;

Emergency personnel need food and drink;

The decision not to use trauma response services immediately following the event may have been unwise. Having critical incident debriefing on sight immediately following the event may have diffused tension and alleviated some of the fear and anger;

The EMT serves a useful purpose; briefing and debriefing are important to ensure that key players have the necessary information to do their jobs and are all working from the same page;

Recommendations

1. Establish guidelines for the moratorium; what exactly does it mean? who adjudicates? what are the consequences if it is ignored;

2. The University should formally thank the police for their collaboration and apologize to them police for any misunderstanding or inaccurate reporting;
3. Continue to communicate with the University community as the situation evolves;
4. Do not hold large public assemblies with the potential for public disturbance in the Hall Building unless the building is closed;
5. Evaluate our communication plan for the internal community; use the Faculties to communicate with their personnel;
6. Purchase better communication equipment for first line responders;
7. Consider engaging the union executives in information briefings prior to key events;
8. Review the security procedures developed to deal with various scenarios and write them up into operating procedures for the Department;
9. Ensure that an emergency communications system is built into the new voice-over IP system.
10. Establish a chain of command for governance should Senior Administrators be unavailable or disabled;
11. Members of Rector's Cabinet should not all be away on retreat during the first week of class;
12. Establish critical incident debriefing services following all traumatic events. Include this into the Emergency Plan

APPENDIX C
Pepper Spray MSDS

MATERIAL SAFETY DATA SHEET

GUARDIAN PERSONAL SECURITY PRODUCTS, Inc.

Date of Preparation: April 18, 1995
Emergency Telephone Number: (602) 582-1070
After Hours Telephone Number: (800) 424-9300

PRODUCT IDENTIFICATION

PRODUCT NAME: BodyGuard Brand
PRODUCT CLASS: Self Defense Spray, Aerosol

HAZARDOUS INGREDIENTS

INGREDIENT:

TRADE SECRET: As defined in
Hazard Communication Act 29 CFR
1910.1200 Para 1 (1) end Appendix
D to CFR 1910.1200

OCCUPATIONAL

EXPOSURE LIMITS:

<u>TLV</u>	<u>PEL</u>	<u>OTHER</u>
Not Est.	Not Est.	-----
1000 PPM	1000 PPM	8 HR TWA
50 PPM	50 PPM	8 HR TWA

PHYSICAL DATA

Vapor Pressure: approx. 60 psia at 25 deg C (77 deg F)
Boiling Point: 0 deg F
Vapor Density: 1.7 (Air = 1.0)
Percentage Volatile by Weight: 95%
Water Solubility: slight
Specific Gravity (Water = 1): Approximately 1.2
Odor: Slight ethereal, Pungent
Appearance: Amber to Light Red

FIRE AND SAFETY EXPLOSION HAZARD DATA

Flammability Classification OSHA: Non-Flammable
Shipping Classification D.O.T.: ORM-D
Flash Point: n/a
Method: n/a
Flammable Limits in Air: n/a
Fire and Explosion Hazards: Do not expose to heat or flame or store above 120°F as high internal pressures may cause cylinders to rupture.
Extinguishing Media: This material is non-flammable. Carbon dioxide, "alcohol-foam" or dry chemical

Special Fire Fighting Procedures:

It is recommended that firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing. Use water spray to cool nearby containers and structures exposed to fire.

HEALTH HAZARD DATA**Primary Route of Entry:**

Dermal, Inhalation

Emergency and First Aid Procedure:**EYES:**

Flush eyes with large quantities of water to speed recovery. Face subject into wind or forced air source such as fans or air conditioning outlet.

SKIN CONTACT:

Wash affected area with soap and water and avoid transfer to more sensitive areas.

INHALATION:

Inflammatory, causes blood to flow to affected area causing feeling of restricted airway. Move persons to fresh air.

INGESTION:

Severe burning heartburn sensation may cause nausea.

PHYSIOLOGICAL EFFECTS AND HEALTH INFORMATION**Eye Effects:**

This product is an eye irritant. Tearing & redness may occur.

Skin Effects:

Skin irritant, redness may occur, defatting may occur upon prolonged contact.

REACTIVITY DATA**Stability:**

Stable. Polymerization will not occur

Conditions to Avoid:

Heat, open flame, welding arcs or other high temperature sources which may induce thermal decomposition.

Materials to Avoid:

May form peroxides with air (which may be ignitable).

SPILL OR LEAK PROCEDURES**STEPS TO BE TAKEN IN CASE OF MATERIAL IS RELEASED OR SPILLED**

Ventilate Area. Avoid prolonged breathing of vapors.

Confine spill with inert absorbers. Wear protective equipment during clean up. Keep out of sewers, storm drains, surface water and soil.

WASTE DISPOSAL

Incinerate in an approved incinerator or dispose of in accordance with Local, State and Federal Regulations.

SAFE HANDLING AND INFORMATION**Respiratory Protection:**

Use NIOSH/MSHA approved Chemical/Mechanical type filter system to remove a combination of particles, gas and vapor if existing local exhaust measures are inadequate.

Ventilation:

Use adequate ventilation in volume and pattern to keep PEL and TVL's in Section 3 above below recommended level to produce explosion or fire. General mechanical; ventilation should comply with OSHA 1910.94.

FICHE SIGNALÉTIQUE

Manufacturier : Defense Technology Corporation of America
Adresse : Boîte postale 240, Casper, Wyoming, 82602, USA.
Téléphone d'urgence : (800) 424-9300
Autres Informations : (800) 733-3832
Préparé le : 15 février 1999

État chimique : ☒ Liquide ☐ Gaz ☐ Solide
Type chimique : ☐ Pure ☒ Mélange

I. – Identification:

Nom usuel du produit (sur l'étiquette)
Nom de commerce et synonymes

FIRST DEFENSE MK-3
5039, 5049, 5069, 5089, 5721, 5746, 5846L

II. – Ingrédients:

Composante(s) chimique(s)	OSHA PEL	ACGIH TLV	Autres limites d'exposition	% (option)	N° CAS
* Oléorésine de capsicum	N/A	N/A	N/A	.18	404-86-4
* Glycol de propylène (USP)	N/A	N/A	N/A	13	57-55-6
* Alcool spécialement dénaturé (SDA) 40B	1,000 ppm	1,000 ppm	N/A	28	64-17-5
* H ₂ O distillée	N/A	N/A	N/A	58	N/A
* Le nitrogène est l'unique propulseur.					
* Ne contient pas de HCFC ou de CFC.					
* Brevet US 5,217,708.					

III. – Identification des risques:

Catégories de risques:

☒ Aigu ☒ Chronique ☐ Incendie ☐ Pression ☐ Réactivité
Information sur l'identification des risques: N/A

IV. – Mesures de premiers soins:

Voie(s) d'accès: inhalation, yeux, peau, ingestion.

Risques pour la santé (aigu et chronique): N/A

Signes et symptômes:

Les ingrédients causent de l'irritation dans toutes les voies d'accès. Un contact répété peut provoquer la dermatite. L'ingestion peut causer nausées, vomissements ou diarrhées.

Conditions médicales généralement aggravées par l'exposition:

Peut causer des effets plus sévères mais temporaires sur les personnes asthmatiques ou sur celles qui souffrent d'emphysème.

FICHE SIGNALÉTIQUE – FIRST DEFENSE

Procédures d'urgence et de premiers soins:

- ♦ Inhalation : Donner de l'air frais.
- ♦ Ingestion : Rincer la bouche avec de l'eau. Boire du lait ou de l'eau. Demande médical immédiatement.
- ♦ Peau : Arroser à grande eau.
- ♦ Yeux : Rincer avec de l'eau fraîche pendant au moins quinze (15) min jusqu'à ce que la personne soit soulagée.

Autre(s) avertissement(s) pour la santé: N/A

V. – Mesures en cas de feu ou d'explosion:

Point d'ignition : $> 220^{\circ} F$ + basse limite explosive: N/A + haute limite explosi

Méthode F.P. : N/A

Agents d'extinction: eau, mousse, CO_2 , chimique sec.

Procédures spéciales d'extinction:

Porter un masque ou un appareil respiratoire afin d'éviter l'irritation.

Risques inhabituels en cas de feu ou d'explosion:

Aucun.

VI. – Procédures en cas de déversement accidentel:

Lors de petites fuites, essuyer avec du papier absorbant. En cas de grosse fuite, utiliser un appareil respiratoire autonome afin d'éviter l'irritation et ramasser avec un absorbant.

VII. – Manutention et entreposage:

Précautions à prendre:

Entreposer dans un endroit frais et sec. Éviter la lumière directe et la chaleur. Ne pas exposer à des températures au-delà de $120^{\circ} F$.

Autres précautions: N/A

VIII. – Contrôles sur l'exposition / protection personnelle:

Exigences de ventilation:

Oui.

Équipement de protection personnelle:

Non requis lors d'un usage normal.

IX. – Propriétés physiques et chimiques:

Point d'ébullition: $> 220^{\circ} F$

Taux d'évaporation (acétate butyle = 1):

Gravité spécifique ($H_2O = 1$): 0.955

Solubilité dans l'eau: soluble.

Autre(s) information(s): N/A

Point de fusion: N/A

Pression de vapeur (mm Hg): N/A

Densité de vapeur (AIR = 1): N/A

Apparence et odeur: crémeuse / piquante

FICHE SIGNALÉTIQUE – FIRST DEFENSE

X. – Stabilité et réactivité:

Stabilité:

Stable

Incompatibilité (matériaux à éviter):

N/A

Décomposition:

N/A

Polymérisation hasardeuse:

Ne peut arriver.

XI. – Information toxicologique:

XII. – Information écologique:

XIII. – Considération de traitement:

X Évacuer les contenants dans un endroit sûr et disposer selon les règlements municipal, provincial et fédéral.

XIV. – Information sur le transport:

XV. – Information de contrôle:

XVI. – Autre(s) information(s):

N/A = non applicable

ND = non déterminé

NE = non établi

Nous croyons que l'information ci-dessus est précise et représente la meilleure information disponible. Cependant, nous ne faisons aucune garantie de qualité loyale et marchande ou toute autre garantie, implicite ou explicite, quant à cette information, et nous n'assumons aucune responsabilité quant à son utilisation. L'utilisateur devra faire ses propres investigations quant à la pertinence de l'information pour ses besoins spécifiques.

APPENDIX D
ABC Dry Chemical MSDS

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards¹

PART I What is the material and what do I need to know in an emergency?

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):

SYNONYMS:

MANUFACTURER'S NAME:

ADDRESS:

EMERGENCY PHONE:

BUSINESS PHONE:

DATE OF PREPARATION:

ABC DRY CHEMICAL

Multi-Purpose Dry Chemical

AMEREX CORPORATION

P.O. BOX 81

Trussville, AL 35173-0081

1-800-424-9300 (CHEMTREC)

(205) 655-3271

November 2, 1995

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			OTHER
			TLV mg/m ³	STEL mg/m ³	PEL mg/m ³	STEL mg/m ³	IDLH mg/m ³	
Mono Ammonium Phosphate	7722-76-1	95	ACGIH TLV for Particulates, Not Otherwise Classified = 10; OSHA PEL for Particulates Not Otherwise regulated, Total Dust = 15, Respirable Fraction 5.					
Ammonium Sulfate	7783-20-2							
Mica	12001-26-2	< 3	3 (Respirable Fraction)	NE	3 (Respirable Fraction)	NE	NE	NE
Attaclay	8031-18-3	< 3	NE	NE	NE	NE	NE	NE
Silicone Oil	63148-57-2	< 1	NE	NE	NE	NE	NE	NE
Calcium Carbonate	471-34-1	< 1	ACGIH TLV for Particulates, Not Otherwise Classified = 10; OSHA PEL for Particulates Not Otherwise regulated, Total Dust = 15, Respirable Fraction 5.					
Silica (Precipitated)	112926-00-8	< 1	2	NE	6	NE	NE	NE
Yellow Pigment	5468-75-7	< 1	NE	NE	NE	NE	NE	NE

NE = Not Established

C = Ceiling Level See Section 16 for Definitions of Terms Used.

¹ NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This mixture of dry chemicals poses little hazard. Mechanical irritation of the eyes is possible during the use and maintenance of the extinguishing units. Chronic inhalation of any particulate may damage the lungs.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: Over-exposure to this product may cause mild skin irritation, moderate eye irritation, and possible gastric distress. The product is not known to cause chronic illness.

INHALATION: Inhalation of this product should be avoided, but if it occurs, may cause mild irritation of the nose, throat, and other tissues of the respiratory system.

CONTACT WITH SKIN or EYES: Contact of dust from this product with the eyes may cause moderate irritation, reddening of the affected eye, and discomfort.

SKIN ABSORPTION: No component of this product is known to absorb through the skin.



INGESTION: Ingestion of this product may cause mild gastric distress.

INJECTION: While injection of this product is unlikely, it may occur as a result of a puncture or cut with a sharp object contaminated with the extinguishing agent. Mild symptoms, similar to those of skin irritation may occur.

HEALTH EFFECTS OR RISKS FROM EXPOSURE:
An Explanation in Lay Terms. This product poses low, acute health risks.

ACUTE: This extinguishing material presents only a slight risk of causing acute health effects. If such effects occur, they will be in the form of mild irritation of the skin, nose, or throat and moderate irritation of the eyes. If ingested, this product may cause an upset stomach.

CHRONIC: This product is not known to cause any chronic illnesses or diseases.

HAZARDOUS MATERIAL INFORMATION SYSTEM			
HEALTH		(BLUE)	1
FLAMMABILITY		(RED)	0
REACTIVITY		(YELLOW)	0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8
For routine industrial applications			

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

SKIN EXPOSURE: If spilled on skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. If reddening or irritation occurs, victim and rescuers must seek immediate medical attention.

EYE EXPOSURE: If chemical is splashed in eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes.

INHALATION: If chemical is inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. If reddening or irritation occurs, victim and rescuers must seek immediate medical attention.

4. FIRST-AID MEASURES (Continued)

INGESTION: If chemical is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Victim should drink milk, egg whites, or large quantities of water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow.

If exposure causes obvious distress, victim(s) and rescuers must be taken for medical attention. Take copy of label and MSDS to physician or health professional with victim.

5. FIRE-FIGHTING MEASURES

FLASH POINT, °C (method): Not applicable.

AUTOIGNITION TEMPERATURE, °C: Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: None. This product is a fire extinguishing agent.

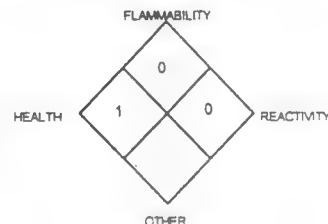
UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce irritating fumes and toxic gases including sulfur oxides, carbon dioxide and carbon monoxide.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment.

NFPA RANKING



6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel. If it is determined that exposure guidelines for nuisance particulates – 10 mg/m³ (total particulates) or 5 mg/m³ (respirable particulates) – is exceeded, use **Level C: triple-gloves (rubber gloves and nitrile gloves, over latex gloves), chemically resistant suit and boots, hard-hat, and air purifying respirator with a HEPA filter**. Sweep-up the spilled solid and place all spill residue in a double plastic bag and seal. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13).

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Avoid getting chemicals ON YOU or IN YOU. Wash hands after handling chemicals. Do not eat or drink while handling chemicals.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing dusts generated by this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment using soapy water before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Use a mechanical fan or vent area to outside.

RESPIRATORY PROTECTION: Respiratory protection is not expected to be needed. Maintain airborne contaminant concentrations below guidelines for nuisance particulates: 10 mg/m³ (total particulates) or 5 mg/m³ (respirable particulates). If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, or applicable State regulations. Use supplied air respiratory protection if oxygen levels are below 19.5%.

EYE PROTECTION: Safety glasses.

HAND PROTECTION: Wear rubber gloves for routine industrial use. Use triple gloves for spill response, as stated in Section 6 of this MSDS.

BODY PROTECTION: Use body protection appropriate for task.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY: Not applicable.

SPECIFIC GRAVITY: Approximately 0.85

SOLUBILITY IN WATER: Not soluble. Water-repellent coating.

VAPOR PRESSURE, mm Hg @ 20 °C: Not applicable.

APPEARANCE AND COLOR: This material is a finely divided, yellowish powder.

HOW TO DETECT THIS SUBSTANCE (warning properties): This product does not have any specific warning properties.

EVAPORATION RATE (n-BuAc=1): Not applicable.

MELTING POINT or RANGE: Not applicable.

BOILING POINT: Not applicable.

pH (10% solution): Approximately 4-5.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Sulfur oxides, carbon monoxide and carbon dioxide.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong alkalis, magnesium, swimming pool sanitizers (inorganic perchlorates, sodium dichloroisocyanurate dihydrate, trichloroisocyanuric acid, calcium hypochlorite, and other strong oxidizers).

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following data is available for components of this product greater than 1 percent by weight in concentration.

AMMONIUM SULFATE

TDLo (oral, man) = 1500 mg/kg

LD₅₀ (oral, rat) = 3000 mg/kg

LD₅₀ (interperitoneal, rat) = 610 mg/kg

MONO-AMMONIUM PHOSPHATE

No specific toxicology information is available.

A mild skin, eye, and respiratory irritant.

SUSPECTED CANCER AGENT: This product's ingredients are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA. A variety of silica forms (i.e. crystalline, fumed) are reported in IARC as a Group 3 Compound (Human Inadequate Evidence; Animal Inadequate Evidence).

IRRITANCY OF PRODUCT: This product may cause mild skin and respiratory irritation and moderate eye irritancy.

SENSITIZATION TO THE PRODUCT: This product is not known to cause sensitization.

11. TOXICOLOGICAL INFORMATION (Continued)

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not known to cause mutagenic effects.

Teratogenicity: This product is not known to cause teratogenic effects.

Reproductive Toxicity: This product is not known to cause reproductive toxicity effects.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Prolonged contact with this product may cause pre-existing dermatitis to become aggravated. Persons sensitive to pulmonary irritation upon exposure to high concentrations of dust should use appropriate engineering controls or respiratory protection when recharging fire extinguishers.

RECOMMENDATIONS TO PHYSICIANS: Treat patient symptoms. This product should not cause any notable clinical symptoms.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: No adverse environmental consequences are expected.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: None currently known.

EFFECT OF CHEMICAL ON AQUATIC LIFE: Not expected to harm aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This chemical, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

<u>PROPER SHIPPING NAME:</u>	Not applicable.
<u>HAZARD CLASS NUMBER and DESCRIPTION:</u>	Not applicable.
<u>UN IDENTIFICATION NUMBER:</u>	Not applicable.
<u>PACKING GROUP:</u>	Not applicable.
<u>DOT LABEL(S) REQUIRED:</u>	Not applicable.
<u>EMERGENCY RESPONSE GUIDE NUMBER:</u>	Not applicable.

MARINE POLLUTANT: Not applicable.

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY TRANSPORT CANADA "TRANSPORTATION OF DANGEROUS GOODS" REGULATIONS.

15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: No component of this product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.

SARA Threshold Planning Quantity: Not applicable.

TSCA INVENTORY STATUS: All components are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

OTHER FEDERAL REGULATIONS: Not applicable.

STATE REGULATORY INFORMATION: Chemicals in this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None.

California - Permissible Exposure Limits for Chemical Contaminants: None.

Florida - Substance List: Mica Dust, Ammonium Sulfate (Dry, Crystalline).

Illinois - Toxic Substance List: None.

Kansas - Section 302/313 List: None.

Massachusetts - Substance List: Mica Dust, Ammonium Sulfate (Dry, Crystalline),

Minnesota - List of Hazardous Substances: None.

Missouri - Employer Information/Toxic Substance List: None.

New Jersey - Right to Know Hazardous Substance List: None.

North Dakota - List of Hazardous Chemicals, Reportable Quantities: None.

Pennsylvania - Hazardous Substance List: None..

Rhode Island - Hazardous Substance List: Mica Dust, Ammonium Sulfate (Dry, Crystalline).

Texas - Hazardous Substance List: No..

West Virginia - Hazardous Substance List: None..

Wisconsin - Toxic and Hazardous Substances: None..

CALIFORNIA PROPOSITION 65: No component is listed on the California Proposition 65 lists.

LABELING (Precautionary Statements): CAUTION! May cause skin or eye irritation. Avoid contact with skin or eyes. In the event of contact, rinse affected part of your body with water for at least 15 minutes. Seek medical attention if reddening or irritation occurs. Keep container tightly closed. Store in a cool, dry location away from incompatible materials. Clean-up spills promptly. This product will not contribute to the intensity of a fire.

TARGET ORGANS: Skin, eyes.

WHMIS SYMBOLS: Not applicable.

16. OTHER INFORMATION

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.
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DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour **Time Weighted Average (TWA)**, the 15-minute **Short Term Exposure Limit**, and the instantaneous **Ceiling Level**. Skin adsorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration.

PEL - Permissible Exposure Limit - this exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The **IDLH - Immediately Dangerous to Life and Health** level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. The **DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL.

NIOSH is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called **Recommended Exposure Levels (RELs)**. When no exposure guidelines are established, an entry of **NE** is made for reference.

FLAMMABILITY LIMITS IN AIR: Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA)**.

LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL** - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD₅₀** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC₅₀** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program; **RTECS** - the Registry of Toxic Effects of Chemical Substances; **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom; **TDo**, **LDLo**, and **LDo**, the lowest dose to cause death.

REGULATORY INFORMATION

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazard information System. **DOT** and **CTC** are the U.S. Department of Transportation and the Canadian Transportation Commission, respectively. These are: **Superfund Amendments and Reauthorization Act (SARA)**; the **Toxic Substance Control Act (TSCA)**; Marine Pollutant status according to the DOT; California's Safe Drinking Water Act (**Proposition 65**); the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings which appear on the materials package label.

FIRE EXTINGUISHER
Cautions and Warnings

Fire extinguishers are designed and produced for the specific purpose of providing a safe and efficient safety tool to be used only in the fighting of fires. Improper or careless use may cause severe bodily injury and/or property damage.

Contents are under pressure which is necessary to deliver the contained extinguishing agent to the fire source. Please take note of the following safety information:

- Contents are under pressure. Do not puncture, incinerate, or discharge into another person's face.
- Do not store at high temperatures above 120°F or 49°C.
- Keep away from small children.
- Do not use if the extinguisher appears to be damaged or corroded.
- Avoid inhaling the extinguishing agent. Avoid inhaling smoke and fumes - all fires release toxic substances that are harmful. DO NOT remain in a closed area after use; evacuate the area immediately and ventilate thoroughly before re-entering.
- Although extinguishing agents are non-toxic when used properly, contact with them may cause irritation to eyes, nose, throat, and other allergic symptoms.

Refer to specific extinguishing-agent material safety data sheet for additional information.

AVOID INHALING SMOKE AND FUMES; ALL FIRES RELEASE TOXIC SUBSTANCES THAT ARE HARMFUL. DO NOT REMAIN IN CLOSED AREA AFTER USE. VENTILATE CLOSED AREAS BEFORE RETURNING.